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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Benson et al. ) Group Art Unit Unassigned  
Appl. No. : ~~Unassigned~~ 09/110A,606 )  
Filed : Herewith )  
For : METHOD AND SYSTEM FOR )  
MANAGING A DATA )  
OBJECT SO AS TO COMPLY )  
WITH PREDETERMINED )  
CONDITIONS FOR USAGE )  
Examiner : Unassigned )

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents  
Washington, D.C. 20231

Dear Sir:

Prior to an examination on the merits, please enter the amendments below.

IN THE CLAIMS:

Please cancel Claims 1-29, without disclaimer or prejudice.

Please add the following new Claims 30-69 as follows:

30. A method of managing a data object so as to comply with control conditions for usage of the data object, comprising:

- providing a variable number of control conditions for usage of the data object;
- providing a general set of control data for the data object based on the variable number of control conditions for usage, the general set of control data comprising at least one or more usage control elements defining usages of the data object which comply with the variable number of control conditions;
- combining the general set of control data with the data object; and

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encrypting the data object and the one or more usage control elements to create a secure data package.

2 ~~31~~. The method of Claim ~~30~~<sup>1</sup>, additionally comprising encrypting together the data object and the general set of control data.

3 ~~32~~. The method of Claim ~~30~~<sup>1</sup>, wherein providing the general set of control data includes providing an identifier which uniquely identifies the general set of control data.

4 ~~33~~. The method of Claim ~~30~~<sup>1</sup>, wherein providing the general set of control data includes providing a security control element which identifies a security process to be applied before usage of the data object is allowed.

5 ~~34~~. The method of Claim ~~30~~<sup>1</sup>, wherein providing the general set of control data includes providing a format control element which identifies the format of the control data.

6 ~~35~~. The method of Claim ~~30~~<sup>1</sup>, additionally comprising:  
receiving a request for authorization for usage by a user;  
comparing the usage for which authorization is requested with the one or more usage control elements of the general set of control data; and  
granting the authorization if the usage for which authorization is requested complies with the usages defined by the one or more usage control elements.

7 ~~36~~. The method of Claim ~~35~~<sup>6</sup>, additionally comprising requiring payment for the requested authorization for usage before granting the authorization.

8 ~~37~~. The method of Claim ~~30~~<sup>1</sup>, additionally comprising:  
transmitting the secure data package into a data processor;

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checking, in response to a request by a user for usage of the data object, whether the requested usage complies with the usage defined by the at least one usage control element of the general set of control data; and

decrypting, in response to the requested usage complying with the usage defined by the at least one usage control element of the general set of control data, the data object so as to enable the requested usage.

- 9 38. The method of Claim 37<sup>8</sup>, additionally comprising:  
combining, after the usage of the data object, the data object and the one or more usage control elements; and  
reencrypting at least the data object and the one or more usage control elements.

- 10 39. A method of controlling the usage by a user of a data object so as to comply with control conditions for usage of the data object, comprising:  
providing a variable number of control conditions for usage of the data object;  
providing a data package comprising a data object and control data, which comprises at least one usage control element defining a usage of the data object which complies with the variable number of control conditions, the data object and the at least one usage control element being encrypted;  
receiving a request by the user for usage of the data object;  
decrypting the control data;  
checking, in response to the request by the user for usage of the data object, whether the requested usage complies with the usage defined by the at least one usage control element of the control data; and  
decrypting, in response to the requested usage complying with the usage defined by the at least one usage control element of the control data, the data object and enabling the requested usage.

- 11 40. The method of Claim 39<sup>10</sup>, wherein the usage control element is updated after the at least one usage of the data object.

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12 41. The method of Claim 39<sup>10</sup>, wherein the control data comprises an indication of the number of times the user is authorized to use the data object in accordance with the at least one usage control element, wherein the requested usage of the data object is only enabled when the number of times is one or more, and wherein the number of times is decremented by one when the requested usage is enabled.

13 42. The method of Claim 39<sup>10</sup>, wherein the control data comprise a security control element, and additionally comprising executing, before each usage of the data object, a security procedure defined in the security control element.

14 43. The method of Claim 39<sup>10</sup>, wherein checking whether the requested usage complies with the usage defined by the at least one usage control element, comprises checking that a data processor is capable of executing a security procedure specified in a security control element of the at least one usage control element, and if not, disabling the usage.

15 44. The method of Claim 39<sup>10</sup>, additionally comprising:  
combining, after the usage of the data object, the data object and the one or more usage control elements; and  
reencrypting at least the data object and the one or more usage control elements.

16 45. A system for managing a data object so as to comply with control conditions for usage of the data object, comprising:

a user interface module which receives a variable number of control conditions;  
a packaging module which provides a general set of control data for the data object based on the variable number of control conditions for usage, the general set of control data comprising at least one or more usage control elements defining usages of the data object which comply with the variable number of control conditions and which combines the general set of control data with the data object; and

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an encrypting module which encrypts the data object and at least the one or more usage control elements to create a secure data package necessary.

<sup>17</sup>  
46. The system of Claim <sup>16</sup>45, wherein the general set of control data comprises a control data element which controls further distribution of the data object.

<sup>18</sup>  
47. The system of Claim <sup>16</sup>45, wherein one of the usage control elements includes a security control element that defines a security procedure.

<sup>19</sup>  
48. The system for controlling the usage by a user of a data object so as to comply with control conditions for usage of the data object, comprising:

a usage manager module which receives a variable number of control conditions, checks whether a usage requested by the user complies with the usage defined by at least one usage control element that complies with the variable number of control conditions, and disables the usage requested by the user when the usage does not comply with the usage defined by the at least one usage control element; and

a decryption module which decrypts the at least one usage control element and the data object.

<sup>20</sup>  
49. The system of Claim <sup>19</sup>48, wherein one of the usage control elements includes a security control element that defines a security procedure.

<sup>21</sup>  
50. The system of Claim <sup>20</sup>49, wherein the security procedure is an RSA encryption algorithm.

<sup>22</sup>  
51. The system of Claim <sup>19</sup>48, wherein the usage manager module repackages the data object after usage.

<sup>23</sup>  
52. A method of controlling the usage by a user of data objects so as to comply with a variable number of conditions for usage of the data objects, comprising:

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providing at least two data packages, each data package comprising a data object and a user set of control data, which comprises at least one usage control element defining a usage of the data object which complies with the variable number of conditions, the data object and the at least one usage control elements being encrypted;

decrypting the usage control elements of the user sets of control data;

examining the usage control elements of the at least two data packages to find a match; and

performing an action being specified in the user sets of control data of the at least two data packages.

<sup>24</sup>53. The method of Claim <sup>23</sup>52, wherein one of the at least two data packages is a sell order, and wherein one of the at least two data packages is a buy order.

<sup>25</sup>54. The method of Claim <sup>23</sup>52, additionally comprising checking whether a data processor is capable of executing a security procedure specified in a security control element of the at least one usage control element, and disabling the usage when the data processor is not capable of executing the security procedure.

<sup>26</sup>55. The method of Claim <sup>23</sup>52, additionally comprising:  
updating the at least one usage control element of each data package;  
combining after the usage of the data objects, each of the data objects and its at least one usage control element;  
reencrypting each of the combined data objects and its at least one usage control element; and  
transferring the repackaged data objects to their providers.

<sup>27</sup>56. A method of managing a data object so as to comply with a variable number of control conditions for usage of the data object, comprising:  
providing variable control conditions for usage of the data object;

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providing a general set of control data for the data object based on the variable control conditions for usage, the general set of control data comprising at least one or more usage control elements defining usages of the data object which comply with the variable control conditions;

providing, in response to a request for authorization for usage of the data object by a user, a user set of control data, which comprises at least a subset of the general set of control data, including at least one of the usage control elements;

combining the user set of control data with the data object;

encrypting at least the data object and the at least one of the usage control elements of the user set of control data to create a secure data package; and

checking, before allowing transfer of the data package to the user, that the request for authorization for usage of the data object has been granted.

28 57. The method of Claim 56<sup>27</sup>, additionally comprising checking whether a data processor is capable of executing a security procedure specified in a security control element of the at least one usage control element, and disabling the usage when the data processor is not capable of executing the security procedure.

29 58. The method of Claim 56<sup>27</sup>, wherein the data object is composed of at least two constituent data objects and wherein the user set of control data, in response to a request for authorization for usage of one of the constituent data objects by a user, is created only for that constituent data object and combined only with a copy of that constituent data object.

30 59. The method of Claim 56<sup>27</sup>, wherein the request for authorization is received from a user via a data network.

31 60. The method of Claim 56<sup>27</sup>, wherein the data object is a composite data object including at least two constituent data objects, and wherein providing a general set of control data comprises providing a respective general set of control data for each of the constituent data objects and the composite data object, and wherein providing a user set of control data comprises

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providing a respective user set of control data for each of the constituent data objects and the composite data object.

<sup>32</sup>61. The method as defined in Claim <sup>27</sup>56, additionally comprising storing the user set of control data in a processor of a data object provider.

<sup>33</sup>62. The method as defined in Claim <sup>27</sup>56, additionally comprising:  
transmitting the data package;  
decrypting the at least one usage control element of the user set of control data;  
checking, in response to a request by the user for usage of the data object, whether the requested usage complies with the usage defined by the at least one usage control element of the user set of control data; and  
decrypting, in response to the requested usage complying with the usage defined by the at least one usage control element of the user set of control data, the data object and enabling the requested usage.

<sup>34</sup>63. The method of Claim <sup>27</sup>56, additionally comprising:  
transmitting the data package;  
decrypting the at least one usage control element of the user set of control data;  
checking, in response to a request by the user for usage of the data object, whether the requested usage complies with the usage defined by the at least one usage control element of the user set of control data;  
decrypting, in response to the requested usage complying with the usage defined by the at least one usage control element of the user set of control data, the data object and enabling the requested usage; and  
combining, after the usage of the data object, the data object and the one or more usage control elements of the user set of control data, and combining at least the data object and the one or more usage of the user set of control data.

<sup>35</sup>64. A system for managing a data object so as to comply with control conditions for usage of the data object, comprising:



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a packaging module which provides a general set of control data for the data object based on variable conditions for usage, the general set of control data comprising at least one or more usage control elements defining usages of the data object which comply with the variable conditions and which combines the user set of control data with the data object, and wherein the packaging module provides in response to a request for authorization for usage of the data object by a user, a user set of control data, which comprises at least a subset of the general set of control data, which subset comprises at least one of the usage control elements;

an encrypting module which encrypts the data object and at least the one or more usage control elements of the user set of control data to create a secure data package, which is ready for transfer to a user; and

a control module which checks that the request for authorization for usage of the data object has been granted before allowing transfer of the data package to the user.

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65. A method of managing a data object so as to comply with control conditions for usage of the data object, comprising:

providing a general set of control data for the data object based on a variable number of control conditions for usage, the general set of control data comprising at least one or more usage control elements defining usages of the data object which comply with the variable number of control conditions; and

encrypting the data object and the one or more usage control elements to create at least one secure data package.

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34  
66. The method of Claim 65, wherein the data object and the usage control elements are each encrypted into separate secure packages.

38  
67. The method of Claim 65, wherein providing the general set of control data includes providing a security control element which identifies a security process to be applied before usage of the data object is allowed.

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39 68. The method of Claim <sup>34</sup>~~65~~, wherein providing the general set of control data includes providing a format control element which identifies the format of the control data.

69. The method of Claim <sup>36</sup>65, additionally comprising:

- receiving a request for authorization for usage by a user;
- comparing the usage for which authorization is requested with the one or more usage control elements of the general set of control data; and
- granting the authorization if the usage for which authorization is requested complies with the usages defined by the one or more usage control elements.

Respectfully submitted,

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Dated: 10/1/98

By: \_\_\_\_\_

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